

CHRISTINA HAILU

Software Engineer | Research Assistant | Data Engineer | Full-stack developer

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Addis Ababa, Ethiopia

EDUCATION

ADDIS ABABA INSTITUTE OF TECHNOLOGY (AAiT)

B.Sc. in Software Engineering and Computing Technology

Oct. 2019 – Jul. 2024

Addis Ababa, Ethiopia

- > **Cumulative GPA** : 3.67 out of 4.00
- > **Honors** : Great Distinction

RESEARCH EXPERIENCE

Feb. 2023 –
Apr. 2024

UNIVERSITY OF MICHIGAN-ANN ARBOR, MICHIGAN, USA

Research Assistant, Developer - *Interactive Sensing and Computing Lab (ISC Lab)*

ADVISOR : PROFESSOR ALANSON SAMPLE, ASSOCIATE PROFESSOR, EECS DEPARTMENT

- ▶ **Project : Multimodal Virtual-Reality System in Simulation-based Emergency Medicine Training**
(This project was a part of the larger Multimodal Team Emergency Assessment Measures (mTEAM) study funded by the NSF).
- > Developed an **AI-Enhanced Closed-Loop Communication (CLC) Annotation Tool for Medical Education**.
- > Designed and implemented a **web-based interactive visualizer** for medical professionals to review communication patterns in simulation.
- > Implemented **Python-based data script pipelines** that converted unstructured recording data into structured formats, enabling analysis by **GPT-4**.
- > The tool automated the evaluation of communication effectiveness, reducing the need for manual analysis and **achieved a usability score of 76.36 on the SUS scale**, indicating high user acceptability.

 [Assessment](#)

Prompt Engineering LLM React Vite Typescript Pandas Python Prisma TablePlus RapidAPI Fastify

Nov. 2023 –
Mar. 2024

MICHIGAN MEDICINE-mTEAM, MICHIGAN, USA

Research Intern, Developer - *Clinical Simulation Center*

ADVISOR : PROFESSOR VITALIY POPOV, ASSISTANT PROFESSOR OF LEARNING HEALTH SCIENCES

- ▶ **Project : Cognitive Task Analysis of Cardiac Arrest Resuscitation Simulation**
- > Developed an **interactive dashboard system** to visualize critical decision-making points in medical simulations.
- > Designed a **user-centered interface** to facilitate the comparison of cognitive load between novice and expert clinicians.

Data analysis React Javascript Tableau D3.js Nivo

Apr. 2024 –
Present

BITZBRAIN RESEARCH, ADDIS ABABA, ETHIOPIA

Research Member - *Remote*

ADVISOR : MR. AMANUEL MERSHA, LECTURER AT AAiT

- ▶ **Focus : Neural Networks, Artificial Intelligence, Optimization**
- > Conducted a literature review on weight initialization techniques and optimization algorithms in neural networks.
- > Explored possible limitations in current methods and suggested improvements to enhance model performance and training efficiency.

Research methodologies Literature review Presentation skills

ACHIEVEMENTS & AWARDS

- May 2023 – Sept. 2023** **African Undergraduate Research Adventure (AURA)**, program participant at UMich
Selected from 194 applications for a total of 16 positions
- Jul. 10 - 12, 2023** **USENIX OSDI'23 Conference Travel Grant Award** in Massachusetts.
Black Computer Science Students grant award
- Mar. 16 - 21, 2024** **IEEE VR 2024 Diversity, Equity, Inclusion, and Accessibility (DEIA) Grant**
- Jun. 17 - 21, 2024** **CVPR'24 Diversity, Equity, Inclusion (DEI) Award**
- Jul. 2024 - Oct. 2024** **A2SV AI for Impact Hackathon**
Selected as one of the top 32 semifinalists, chosen from over 1,110 teams and 4,928 participants

PROFESSIONAL EXPERIENCE

DATA ENGINEER – KIFIYA FINANCIAL TECHNOLOGY, AI DATA SCIENCE TEAM **Sept. 2024 – Present**

- > **Developed and optimized ETL pipelines** to enable efficient data integration and transformation across diverse financial systems, supporting **real-time data availability and quality**.
- > Managed a **cloud-based data warehouse**, architecting **scalable solutions** for secure storage and rapid retrieval of high-volume business data.
- > Partnered with cross-functional analytics teams to **design automated dashboards and data visualizations**, enhancing **data-driven decision-making** for strategic projects.

Pandas Jupyter Notebooks Python Redash AWS EC2 AWS Athena AWS S3 ELB FEAST SQL

TEAM LEAD & BACK-END DEVELOPER – CAPSTONE THESIS PROJECT **Oct. 2023 – Jul. 2024**

- > Led a team to design and develop an **AI embedded Construction Equipment Rental Application**, streamlining equipment selection for users in real-time.
- > Engineered a **real-time recommendation engine** leveraging collaborative and content-based filtering algorithms to personalize user experience.
- > Integrated a **natural language processing (NLP) chatbot** using OpenAI's GPT API, facilitating seamless, conversational interactions for end-users.

NodeJS JavaScript Postman OpenAI Flutter Render

BACK-END DEVELOPER – COMMERCIAL GRADUATES ASSOCIATION (CGA) **2022**

- > Contributed to the development and optimization of back-end systems for CGA, ensuring robust functionality and performance.

NodeJS Javascript Visual Studio Code

UI/UX DESIGNER & WEB DEVELOPER INTERN – CREATIVE HUB ETHIOPIA **2022**

- > Contributed to the design and development of Dimir Structure's website.

Figma ReactJS NextJS ExpressJS

PRESENTATIONS

African Undergraduate Research Adventure (AURA), **Poster** **Video** **Jul. 27th, 2023**

University of Michigan College of Engineering

Presented a research poster on AI-Enhanced Medical Training Closed-Loop Communication Annotation Tool at the closing ceremony, highlighting key findings.

E-Health & Artificial Intelligence Symposium (e-HAIL), **Poster** **Sept. 2023**

North Campus Research Complex

Presented a poster on key findings from the AI-Driven Closed-Loop Communication Annotation Tool project and engaged in discussions on Explainable AI.

AAU 5th Research and Fair Week, **Poster** **May 13th - 17th, 2024**

Addis Ababa University

Presented a capstone project poster on emerging technologies for sustainable socioeconomic development.



EXTRACURRICULAR ACTIVITIES & LEADERSHIP

Africa To Silicon Valley (A2SV) – SWE Trainee, Member

Nov. 2022 – Dec. 2023

Data Structures and Algorithm Coding Academy

- › Solved over 430 coding problems on platforms like LeetCode, CodeForces, and HackerRank
- › Participated in group discussions and mentoring sessions

Black in AI – Member

Mar. 2024 – Present

- › Participant in Emerging Leader in AI 2024

Special Interest Group on Computer–Human Interaction (SIGCHI) – Member

May 2024 – Present

- › Participant in an international community of students and professionals focused on research, education, and applications in Human-Computer Interaction (HCI).

ALX Africa – Member

Feb. 2022 – 2023

- › Participated in Full Stack Software Engineering with a short specialization in Back-end development.
- › Participated in ALX AiCE - AI Career Essentials.
- › Participant in ALX Pathway programme 2024



TEACHING

Mathematics Tutor

2020

Online

[YouTube Channel](#) [TikTok Profile](#)

- › Designed content that simplifies math problems, making them accessible and relatable.
- › Assisted over 3,000 students in their preparation for the Ethiopian national exam.



SKILLS & OTHERS

Languages : English (Highly Proficient), Amharic (Native), Germany (Beginner)

Programming : Python, R, SQL, Dart, C/C++, TypeScript, JavaScript (NodeJS, ReactJS, ExpressJS), C# (.NET Core), HTML/CSS

Machine Learning Tools : TensorFlow, Pandas, NumPy, Scikit-learn, PyTorch, NLTK

Game Development : OpenGL, Pygame, Unity

Interests : Liberal arts, Musical Instruments, Travel